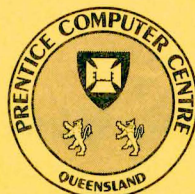


PRENTICE COMPUTER CENTRE

UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.



NEWSLETTER

N-279

24-January-83

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1.0 FILE TRANSFERS BETWEEN KL10 AND OTHER NETWORK NODES

The previous newsletter (N-278) reported that "from 1.3.83 no charge would be levied on the transfer of files between the KL10 computer system and remote computer based work stations where the transfer is made using the Prentice Computer Centre File Access Listener (FAL)." This needs a little more explanation. FAL applies at this stage only in respect of file transfers to and from the KL10 initiated by a job on a remote station running DECNET. We are currently working on a low overhead protocol for file transfer between micro-computer systems and will later incorporate this in the File Access Listener system.

As from 1 March 1983, the situation with respect to network file transfers will be -

- (a) Transfers between the KL10 and another network node, including the central VAX 11/780 system, and which are initiated by a job on the other node will incur no charge on the KL10.
- (b) The charges for file transfers initiated from the KL10 will remain unchanged except that the charges will be lower to the extent of the general price reductions in primary memory and File I/O.
- (c) The charges for file transfers on the VAX 11/780 remain unchanged. It might be noted that the cost of file transfer on the VAX is low - e.g. a file transfer of 161 blocks cost 15 cents at prime shift rate.
- (d) Only ASCII (text files) may be transferred over the network to or from the KL10. Binary files as well as text files may be transferred between PDP11s and between PDP11s and the VAX/VMS system.

The inhibition of charging for file transfers initiated by a job on the KL10 cannot easily be achieved. Thus, we have introduced the File Access Listener system on the KL10 to enable file transfers to be initiated by remote stations and the central VAX 11/780 without incurring charges on the KL10. Had time permitted, it would have been better to implement a system (perhaps through spooling operations) providing a more symmetrical design and this will be considered in future revisions.

Please contact Arthur Hartwig (extension 2958) for further information.

Director
extension 2189

2.0 CURRENT STATE OF THE FAL IMPLEMENTATION FOR THE DEC10

Centre staff have tested the file transfer aspects of FALs operation. Testing of the user validation aspects of FALs operation has not yet been completed. (The User Validation part of FAL ensures that users on a remote node can gain access only to those files they are entitled to access). It is anticipated that testing of FAL will be completed before 1 March 1983 and that the service will be available from 1 March 1983.

Details of how to make use of the DEC10 FAL will be published in the next newsletter.

It may be possible for a limited number of users to participate in the testing of the DEC10 FAL. Interested users should contact me after 1st February for further details.

Arthur Hartwig
extension 2958

3.0 AUTOBAUDING TO 9600 BAUD ON ANF-10 NODES

Once again, we have implemented autobaud software capable of detecting terminal line speeds up to 9600 baud. The following speeds are available: 110, 150, 300, 1200, 2400, 4800, 9600 baud. A terminal line goes into autobaud mode if a framing error is detected on the line. The most reliable way of generating a framing error is to depress the "BREAK" or "INTERUPT" key for a brief period of time, e.g. 1 second. (On Visual 200 terminals this requires the simultaneous depressing of "CONVERT FUNCTION" and "BRK" keys. Other types of terminals may need similar key combinations. If you are unsure, consult your terminal's Users Guide). Wait at least 2 seconds before attempting any more keyboard activity. (You might as well wait, because anything you type gets ignored for 2 seconds after the first framing error, THEN autobauding starts). Now type a succession of carriage-return (<cr>) or control-C (^C) characters. If all goes well, only 2 characters should be required for all speeds except 110 and 150 baud. These speeds will require a minimum of 4 characters to match the speed.

If this does not work immediately, keep typing because the terminal line will not come out of autobaud mode until a valid <cr> or ^C of either parity is received without any framing error.

These new line speeds are available on all lines on DN87SA, DN87SB and GRIFIN nodes. HOWEVER, if you try to drive a MICOM line faster than 2400 baud, you will be very disappointed with the result.

The standard MICOM circuits WILL NOT reliably support speeds faster than 2400 baud. (Please note that the VAX already autobauds to 9600 baud).

Please report any problems via the normal terminal problem procedures (x3938).

Bryan Claire
extension 2960

4.0 NEW VERSION OF IMSL

Version 9.0 of IMSL has arrived and is currently available on NEW. The new version contains forty new routines and 19 routines have been deleted. Deleted routines and their replacements are as follows:

DBCEVU - replaced by DBCEVL
 DBLINT - replaced by DBLIN
 EQRHIF - deleted
 FTCMP - replaced by FTCP
 FTMP5 - replaced by FTMA
 FTMXL - replaced by FTML
 FTTRN - replaced by FTTR
 IBCEVU - replaced by IBCEVL
 IBCICU - replaced by IBCCCU
 NMKEN - replaced by NMKN
 USCRDM - deleted
 USHIST - replaced by USHST
 USHIUT - replaced by USHST2
 USHV1 - replaced by USHHST
 USPLT - replaced by USPLO
 USPLTD - replaced by USPLOD
 USRDM - deleted
 USRDV - deleted
 ZSYSTEM - replaced by XSPOW and ZSCNT

New routines have been added for the following areas:

- . frequency tabulations
- . statistics computation
- . 3 new easy-to-use routines for producing histograms
- . probability plots for normal, lognormal, half-normal, exponential, Weibull and extreme value distributions
- . life table analysis

- . a subroutine to solve a partial differential equation system of the forms $u_t = f(x, t, u, v_x, v_{xx})$
- . a subroutine to solve the generalized eigenvalue problem $Ax = Bx$ when A and B are symmetric and B is positive definite
- . random number generation
- . new routines to efficiently solve very large linear systems.

Further information on new routines can be obtained by typing the HLP file IMSL.

A further 19 Chapter E routines have been reclassified as nuclei and are no longer documented in the reference manual.

EBALAC	EBALAF	EBBCKC	EBBCKF
EBCKCF	EBCKKH	EHSSC	EHSSF
EHOBKS	EHOUH	EHOUSS	ELRHIC
ELRH2C	HELZHC	ELZVC	EQRH3F
EQZQF	EQZTF	EQZVF	

Version 9.0 of IMSL will be moved to STA: on the 1st February, 1983.

Program Librarian
extension 3943

5.0 NAG - DESCRIPTION OF OUTSTANDING ERRORS

The following errors are applicable to the NAG libraries on the KL and VAX. Users inconvenienced by these errors should contact me.

Routine	Description of Error
CO2ADF	Overflow may occur when deflating a polynomial of high degree.
CO2AEF	Overflow may occur when deflating a polynomial of high degree.
D01BCF	Division of zero by zero occurs either if ITYPE = + or - 1 and C+D = -1.0, or if ITYPE = + or - 5 and D = 1.0.

- D02GAF Returns IFAIL = 5 if called with $N > NP$ when $NP \geq 4$, or with $N > 4$ when $NP = 0$.
- Unassigned elements of the array X are used by D02RAY if D02GAF is called with $N > NP$ when $NP \geq 4$, or with $N > 4$ when $NP = 0$.
- Overflow may still occur in D02RAY despite the corrections made at Mark 9, if MNP is such that $2.0^{**}(MNP-3)$ is close to overflowing.
- D02HBF Returns IFAIL = 1 if called with $M1 = 1$.
- D02RAF Returns IFAIL = 9 if called with $N > NP$ and $IJAC = 0$.
- Unassigned elements of the array X are used by D02RAY if D02RAF is called with $N > NP$ and $IJAC = 0$.
- Overflow may still occur in D02RAY despite the corrections made at Mark 9, if MNP is such that $2.0^{**}(MNP-3)$ is close to overflowing.
- F02GJF May occasionally return one or more eigenvalues with the wrong sign.
- D01AHF Overflow may occasionally occur in D01AHX.
- D02GBF D02GBF may perform incorrectly if the number of boundary conditions involving both $y(A)$ and $y(B)$ is not equal to the number of boundary conditions involving $y(B)$ only. The known consequences of the error are:
- D02GBF exits incorrectly with IFAIL = 2 if all the boundary conditions involve both $y(A)$ and $y(B)$
 - D02GBF does not exit with IFAIL = 2 if all the boundary conditions involve $y(B)$ only, but attempts to compute a solution and the results may be wrong
 - D02GBF may fail to find a solution (IFAIL = 3)
 - division by zero may occur in D02RAS.
- Otherwise, the results returned by D02GBF when it exits with IFAIL = 0 have been observed to be acceptable; however any important results should be re-checked, using the corrected routine.
- D03UAF Array-bound error if called with $IT < 1$.
- D03UBF Array-bound error if called with $IT < 1$.
- E02DAF Array-bound errors may occasionally occur in E02DAZ if the problem is rank-deficient. This can happen either if there is no data point in the first panel or if row NC-3(PY-4)-3 of the triangular reduction of the observation matrix is considered to be linearly dependent on the other rows. The latter case is more likely with severely rank-deficient

problems.

- E02GAF Generally returns incorrect results. Results should be checked using the amended routine.

- E04GCF Does not check LSFUN2 at the user-supplied starting point X, but at an arbitrary point calculated by the routine. This was contrary to the routine document (specification of X) at Marks 7 and 8; at Mark 9 the routine document was mistakenly amended; at Mark 10 it will be amended again to conform with the corrected routine. This will make the routine consistent with other E04 routines, especially E04GEF and E04HFF (see below).

- E04GEF Does not check LSFUN2 at the user-supplied starting point X, but at an arbitrary point calculated by the routine, contrary to the routine document (specification of X).

- E04HFF Does not check LSFUN2 and LSHES2 at the user-supplied starting point X, but at an arbitrary point calculated by the routine, contrary to the routine document (specification of X).

- F05AAF Division by zero may occur if on entry A has a zero column or if any column of A is an exact linear combination of the preceding columns.

- G02CJF May still return incorrect results in array C (the rows and columns of C being incorrectly permuted), if any columns are interchanged during the QR-factorization of X, i.e. if on exit IPIV(I) .NE. I for any I. The error persists for most (though not all) permutations of the columns of X. Also an undefined variable is used if G02CJF is called with M = 1; this may cause an array-bound error.

Program Librarian
extension 3943

6.0 MLP - MAXIMUM LIKELIHOOD PROGRAM

MLP is a statistical program for handling a large number of non-linear estimation problems. It is particularly useful for curve fitting, growth curves and response curves. For many purposes it is equivalent to the method of least squares, but is more general in application. It provides confidence limits for estimated quantities, tests of goodness of fit and tests for comparison of models.

The modules are:-

- General Model Fitting
- Curve Fitting (polynomials, exponentials, growth curves, compartmental models and splines etc.)
- Frequency Distribution (discrete and continuous)
- Assay Analyses (prolelit, dilution series etc.)
- Regression (including quantal response models)
- Genetic Models (gene frequencies, genetic linkage)
- User define models (with different error distributions and norms)
- Line Series (transition models, differential equations and Box-Jenkins)

MLP may be run in either batch or interactive mode. The program adheres to fortran standards.

The input data file will consist of various directives and options. The file will also include the data. (Directives and options are defined in the manual).

To run MLP:-

```
.R STA:MLP
INPUT FILE SPECIFICATIONS:(e.g.) FOR02.DAT
OUTPUT FILE SPECIFICATIONS:(e.g.) FOR03.DAT
```

A reference manual is available for interested users. Manuals may also be purchased at the batch station. Enquiries regarding the running of MLP may be directed to me.

Betty Young
extension 3943

7.0 NEW SWITCHES ADDED TO TYPE

Those of you out there with printers connected to your video terminals may be interested in two new switches added to TYPE, namely:

```
/PRINT:xxx    where "xxx" is one of - adm,vs200,vt100
/PTYPE:xxx    where "xxx" is one of - sander,80epson,
               132epson
```

A typical command would be -

```
.ty file.ext/pri:vs/pty:san
```

This command is used to print a file on a Sanders printer attached to a VIS200 terminal. Previously this would have been done using the

/SANDER switch, but the method lacked flexibility. The switches /SANDER and /VT100 have been deleted in the new version. The /PRINT switch turns on the terminal's printer port, then the /PTYPE switch initialises the printer. The file is printed and the terminal is reset. The /PRINT switch may be used by itself but /PTYPE alone has no effect. All switch values may be abbreviated to a unique value. For more information see HLP:TYPE.HLP and DOC:TYPE.DOC.

Chris Barker
extension 3940

8.0 INFORMATION CONCERNING COURSES

The Centre will again be conducting regular courses in various aspects of its facilities this year. General and specific notes on the courses to be offered, together with a provisional schedule for 1st semester, are given below.

Reflecting the increasing number and variety of courses, the following changes have been made this year:

- (i) Leonie Roberts has now joined the teaching staff on a regular basis, after having conducted a number of courses in 1982.
- (ii) A new "teaching room" has now been established in Room G13A on the ground floor at the western end of the Hawken Building, and (unless advised otherwise) all future courses will now be conducted there.

Note: This room is NOT a public client room and is open only during times of courses.

For the benefit of new and potential users, the following summary of courses and conditions is provided.

(a) General Notes

- (i) Instruction is currently provided in the following areas:
 - elementary use of terminals, operating system commands, editing, and interactive and batch operation.
 - use of popular packages in such areas as statistics, text-processing, data-base management and graphics.
 - elementary programming in the FORTRAN and BASIC languages.

- (ii) Enrolment is free for staff of University of Queensland and Griffith University and post-graduate students only; all other users must pay the fee prescribed in the following schedule:

Introduction to PDP-10	: \$40
VAX Conversion Course, Statpack	: \$20
1022	: \$50
VG, RUNOFF, SPSS, BASIC	: \$60
FORTTRAN	: \$100

- (iii) With the exception of courses designated (GU) in Section 2, all courses are held in Room G13A, Hawken Building, St Lucia. The courses marked (GU) are held in the Seminar Room, Terminal Laboratory, AES Building, Griffith University.
- (iv) To allow for sufficient practice, enrolments at all courses are limited. Also, where insufficient enrolments are received for courses, the Centre reserves the right to cancel such courses.
- (v) In addition to the courses listed in Section 2, occasional seminars may be conducted from time to time on special topics. Demonstrations for groups with special interests may be arranged on request.

(b) Outline of Courses and Packages

Note: The course "Introduction to PDP-10" is concerned with the development of background material and basic skills and techniques, which are then assumed to be familiar to people enrolled in all other courses. Users without this knowledge and some facility with terminal usage, file-manipulation and editing MUST enrol for this course before enrolling in any other course.

[Because of the wider variety of packages currently available on the KL10, it is assumed that new users may prefer to be introduced to the KL10 system rather than the VAX system. However, if sufficient new users wish to proceed directly to the VAX, it would be possible to arrange a special course to meet this need. Please contact the Centre if your requirements would be better served by this approach.]

(i) Introduction to PDP-10 (12 hours)

Introduction to computer systems in general; basic operating procedures for the PDP-10 system; elementary monitor commands; editing; interactive and batch processing.

(ii) Simple Use of TECO Editor (6 hours)

TECO is a powerful string-oriented editor.

(iii) SPSS (18 hours)

A widely-used general-purpose statistical package. This course is designed to introduce new users to the fundamental techniques necessary to perform any of the wide range of statistical procedures available within SPSS.

(iv) Statpack (4 hours)

Statpack is an interactive statistical package containing a fair range of common analysis routines, suitable for processing data files of modest size.

(v) RUNOFF (18 hours)

RUNOFF is a text-processing package, i.e. it accepts text material with embedded formatting commands to produce output styled to the user's specification. Automatic justification (margin-alignment) and pagination are standard features. RUNOFF is widely used in departmental offices for the production of documents, and by academic staff and students for the production of lecture notes, papers for publication, theses, etc.

(vi) VG (18 hours)

The VG package is used for the storage, interrogation and selective retrieval of information organised as records composed of fields. It is especially applicable to information of a textual nature - catalogues, mailing lists, bibliographic material - because of its variable-length-record nature. Reports may be adapted to user's specifications by using its link to the RUNOFF program.

(vii) 1022 (15 hours)

Another data-base management system, more suited (but not restricted) to records whose field-values are numeric. It has an inbuilt programming capability, as well as interfacing to other host languages, and to SPSS. A comprehensive report-generator is contained within the package.

(viii) Elementary FORTRAN Programming (30 hours)

An introduction to the programming language FORTRAN. The course is built around, but extends beyond, the audio-visual course "A London Fortran Course". Those attending this course are required to purchase a copy of the lecture notes accompanying the audio-visual presentation - available from the Centre at \$5.70.

(ix) Elementary BASIC Programming (18 hours)

Similar in content to the FORTRAN course, but in the BASIC language. This course is suitable also for people working with departmental micro-computers.

(x) Graphics

Use of the plotting and other graphics facilities. Those attending this course will be expected to have a basic working knowledge of FORTRAN (since the plotting routines are written in this language).

(xi) Typesetting

Use of the ITPS Typesetting package for the production of book-quality copy.

(c) Provisional Schedule of Courses for 1st Semester 1983

Note: This list of proposed courses may be inspected by giving the command

.TYPE (or PRINT) HLP:COURSE.HLP

February:

VG	: February 7-11 5 half days 9-12am each day
Elementary BASIC Programming	: February 7-11 5 half days 1-4pm each day
Statpack	: February 14 1 full day 10-12am + 2-4pm
RUNOFF (GU)	: February 15-18 1 full day (Feb 15) 9-12am + 1-4pm + 3 half days (Feb 16-18) 1-4pm each day
Introduction to PDP-10	: February 22-25 4 half days 1-4pm each day
SPSS	: February 28 - March 4 5 half days 9am-12.30pm each day

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March:

Introduction to PDP-10 : March 8-11
4 half days 1-4pm each day

RUNOFF : March 14-18
5 half days 1-4pm each day

1022 : March 21-25
5 half days 1-4pm each day

Introduction to TECO Editing : March 28-29
2 half days 1-4pm each day

April:

Introduction to PDP-10 : April 5-8
4 half days 9-12am each day

Typesetting : April 12-15
4 half days 1-4pm each day

Elementary BASIC Programming : April 18-22
5 half days 9-12am each day

SPSS : April 27-29
3 full days 9-12am + 1-4pm each day

May:

Introduction to PDP-10 : May 3-6
4 half days 1-4pm each day

RUNOFF : May 9-13
5 half days 9-12am each day

Elementary FORTRAN Programming : May 16-20
5 full days 9-12am + 1-4pm each day

1022 : May 23-27
5 half days 9-12am each day

Introduction to PDP-10 : May 30 - June 2
5 half days 9-12am each day

June:

Introduction to PDP-10 : June 6-7
2 full days 9-12am + 1-4pm each day

Elementary BASIC Programming : June 8-10
3 full days 9-12am + 1-4pm each day

SPSS	: June 14-16 3 full days 9-12am + 1-4pm each day
RUNOFF	: June 20-24 5 half days 9-12am each day
1022	: June 20-24 5 half days 1-4pm each day
Introduction to PDP-10	: June 27-28 2 full days 9-12am each day
Typesetting	: June 30 - July 1 2 full days 9-12am + 1-4pm each day
 July:	
Elementary FORTRAN Programming	: July 4-8 5 full days 9-12am + 1-4pm each day
Plotting and Graphics	: July 12-14 3 half days 9-12am each day

Enrolments for all courses may be made by phoning extension 3018.

Barry Maher
extension 3021

9.0 DEPARTMENTAL EQUIPMENT FOR SALE

Computer Science - contact Mike Peluso on extension 2809

7 Texas Instrument silent writers (TI733) in various conditions.
1 TRS 80 Microprocessor Terminal with power supply (no monitor).

If you have modules and peripherals which are no longer required but may be of use to other departments or may be saleable outside please advise us by MAIL to ENGIN or MAINT or contact

Maralyn Kenley
extension 3938

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*UNIX is a Trademark of Bell Laboratories.

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